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A SECOND SPECIES OF THE PONTONIINE SHRIMP GENUS *DASELLA* LEBOUR, *D. ANSONI* SP. NOV., FROM THE ARAFURA SEA.

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ABSTRACT

A second species of the pontoniine shrimp genus *Dasella*, *D. ansoni* sp. nov., is described and illustrated. The specimens were obtained from ascidian hosts, *Phallusia depressiuscula*, collected from 27m in the Arafura Sea.

INTRODUCTION

In 1939 M. V. Lebour described a pontoniine shrimp *Dasia herdmaniae*, found in association with an ascidian, *Herdmania momus* (Savigny), from Tuticorin, South India. The generic name *Dasia* was found to be preoccupied and in 1945 Lebour designated a replacement name, *Dasella*. No further specimens of *Dasella herdmaniae* were reported until 1981, when a single male example from the southern

Great Barrier Reef was found in association with the same host at Heron Island, Queensland (Bruce, 1981). Recently a few further specimens of this genus have been found in association with a different host ascidian in the Arafura Sea. These conform closely to the amended generic description provided by Bruce (1981), while showing a very distinctive dactylar morphology on the ambulatory pereopods, and these specimens are now described as new.

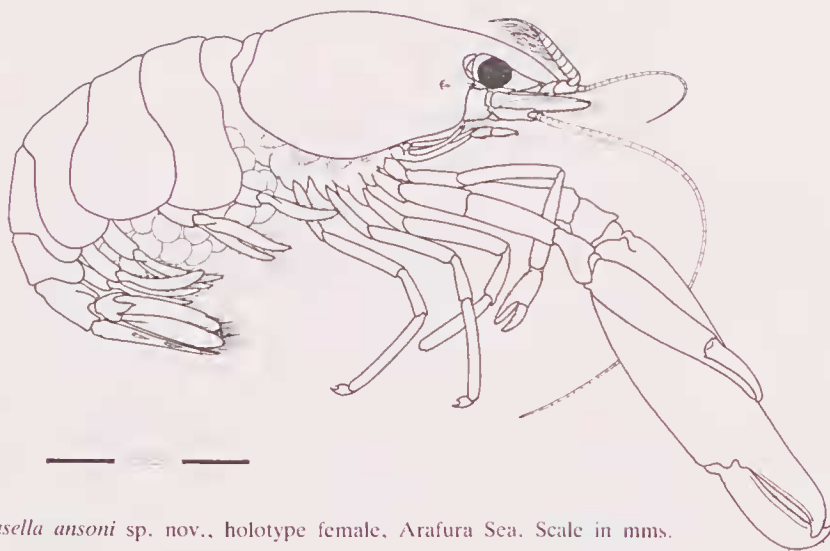


Fig. 1. *Dasella ansoni* sp. nov., holotype female, Arafura Sea. Scale in mms.

***Dasella ansoni* sp. nov.,
(figs. 1-5)**

Material — 1♂, 1 ovig. ♀, 1 bopyridized ♀, Arafura Sea, 12°58.0'S, 132°10.0'E, 27m, trawl, F. V. "Anson", 19 October 1981, coll. A. J. Bruce.

Description — Small sized pontonine shrimps of slender, subcylindrical body form. Carapace smooth with compressed, slightly depressed rostrum reaching almost to end of antennular peduncle, acute, dorsally thickened, without distinct lateral carinae, dorsal teeth absent and one minute acute ventral tooth present near tip. Supraorbital and epigastric spines absent; hepatic spine well developed, small, mobile, lower than antennal spine; inferior orbital angle distinct, produced, subacute; antennal spine small, slender, acute, marginal; anterolateral angle of carapace broadly rounded, unarmed, feebly produced.

Abdomen smooth, with third segment not produced posterodorsally; pleura of first three segments broadly rounded, fourth and fifth slightly produced, rounded; sixth segment about 1.8 times longer than deep and 7.5 times length of fifth segment, posterolateral angle acute, posteroventral angle feebly acute. Telson about 1.8 times length of sixth segment, lateral border

feebly convex, convergent, about 1.4 times longer than anterior width, narrow angular posterior margin, lacking median point, 0.33 times width of anterior telson; two pairs of large subequal dorsal telson spines, submarginal, at 0.35 and 0.50 and equal to about 0.6 of telson length; three pairs of posterior marginal spines, lateral spines small, equal to about 0.25 of length of intermediate spines or dorsal spines, intermediate spines stout, about 0.2 of telson length, 7.5 times longer than wide, submedian spines slender, setulose, exceeding tip of intermediate spines.

Eyes normally developed, cornea globular, oblique and without accessory pigment spot; stalk compressed, 1.4 times longer than wide.

Antennular peduncle with proximal segment 1.2 times longer than wide with acute stylocerite reaching to middle of lateral border, medial border with small acute ventral tooth at half length, anterolateral angle feebly produced with small acute distolateral tooth, lateral border feebly convex; stylocerite normally developed with granular statolith; intermediate and distal segments of subequal length, equal to half length of proximal segment, intermediate segment broader than distal, with a feeble lateral

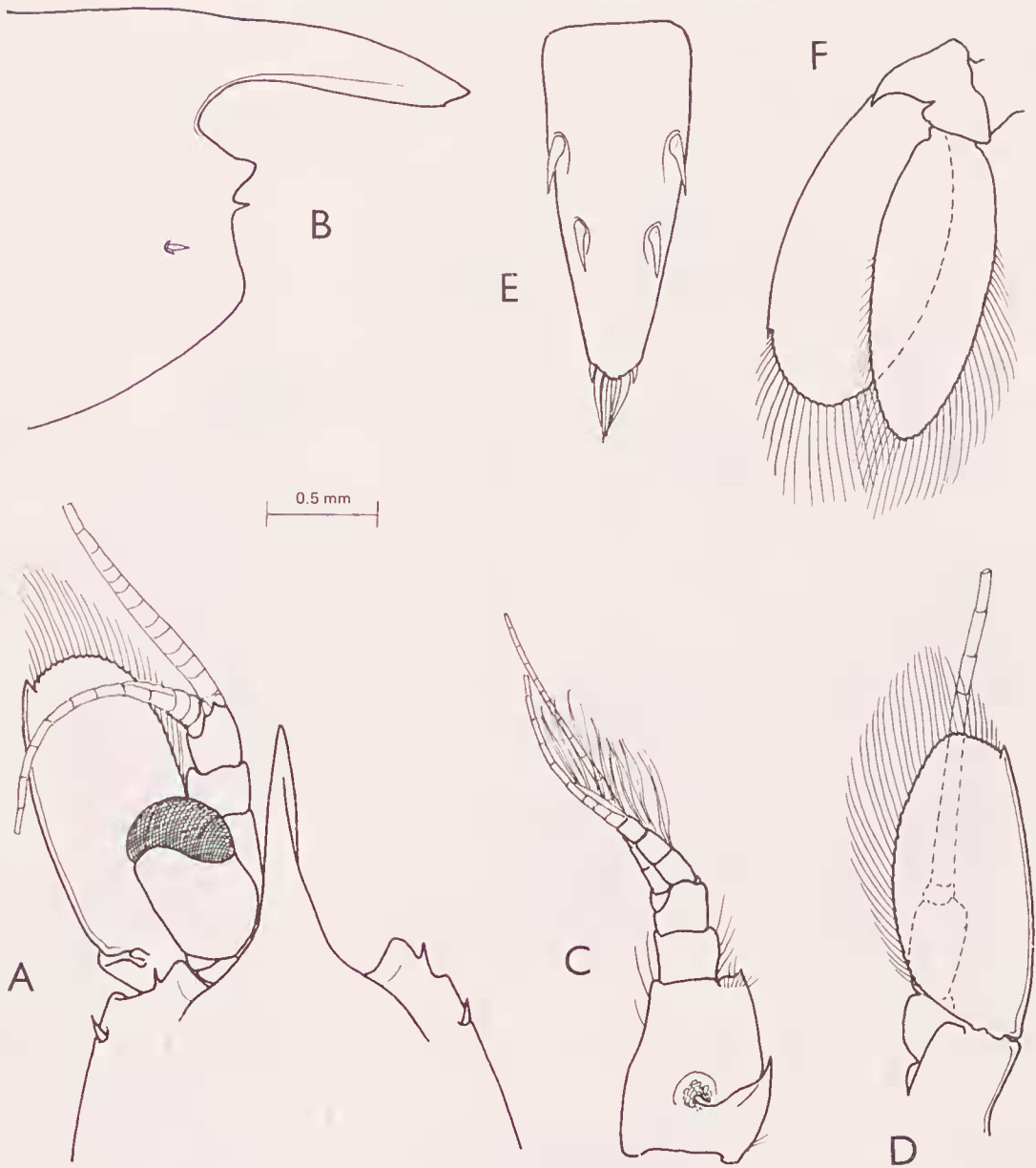


Fig. 2. *Dasella ansoni* sp. nov., paratype female. A, anterior carapace and antennae, dorsal. B, anterior carapace and rostrum, lateral. C, antennule. D, antenna. E, telson. F, uropod.

expansion. Upper flagellum biramous, with three proximal segments fused, shorter free ramus with two segments and about eleven groups of aesthetascs; longer free ramus with nine slender segments; lower flagellum slender with about 14 segments.

Antenna with basicerite robust, laterally unarmed, carpuccerite short and stout, about 2.0 times longer than wide, not reaching

middle of scaphocerite; scaphocerite far outreaching tip of rostrum and antennular peduncle, lamella broad, about 2.2 times longer than wide, greatest width centrally, lateral border slightly convex with small acute distolateral tooth clearly outreached by rounded anterior border of lamella; flagellum slender, short, equal to 2.6 times postorbital carapace length.

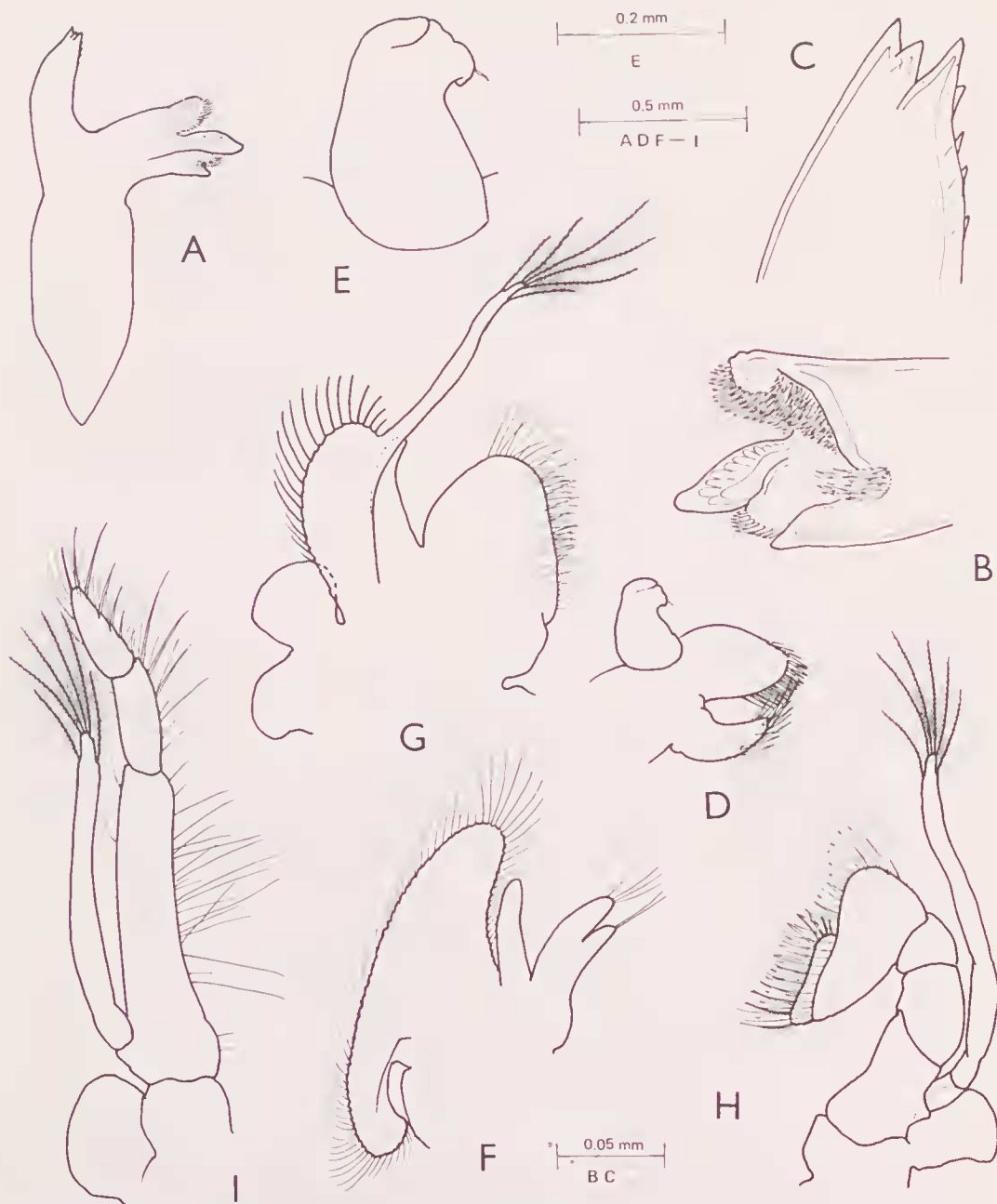


Fig. 3. *Dasella ansoni* sp. nov., paratype female. A, mandible. B, molar process. C, incisor process. D, maxillula. E, *idem*, palp. F, maxilla. G, first maxilliped. H, second maxilliped. I, third maxilliped.

Mouthparts of normal pontoniine pattern. Mandible with moderately robust corpus, without palp; molar process stout, with two lobes fringed with setae, small subacute tooth and large blunt tooth; incisor process slender, tapering distally with three small acute distal teeth and small denticles

along inner margin. Maxillula with short, stout, feebly bilobed palp, lower lobe with single, short, simple seta; upper lacinia broad, tapering distally with about 11 short finely serrulate spines distally and similar setae ventrally; lower lacinia slender, with about 5 long slender serrulate spines distally

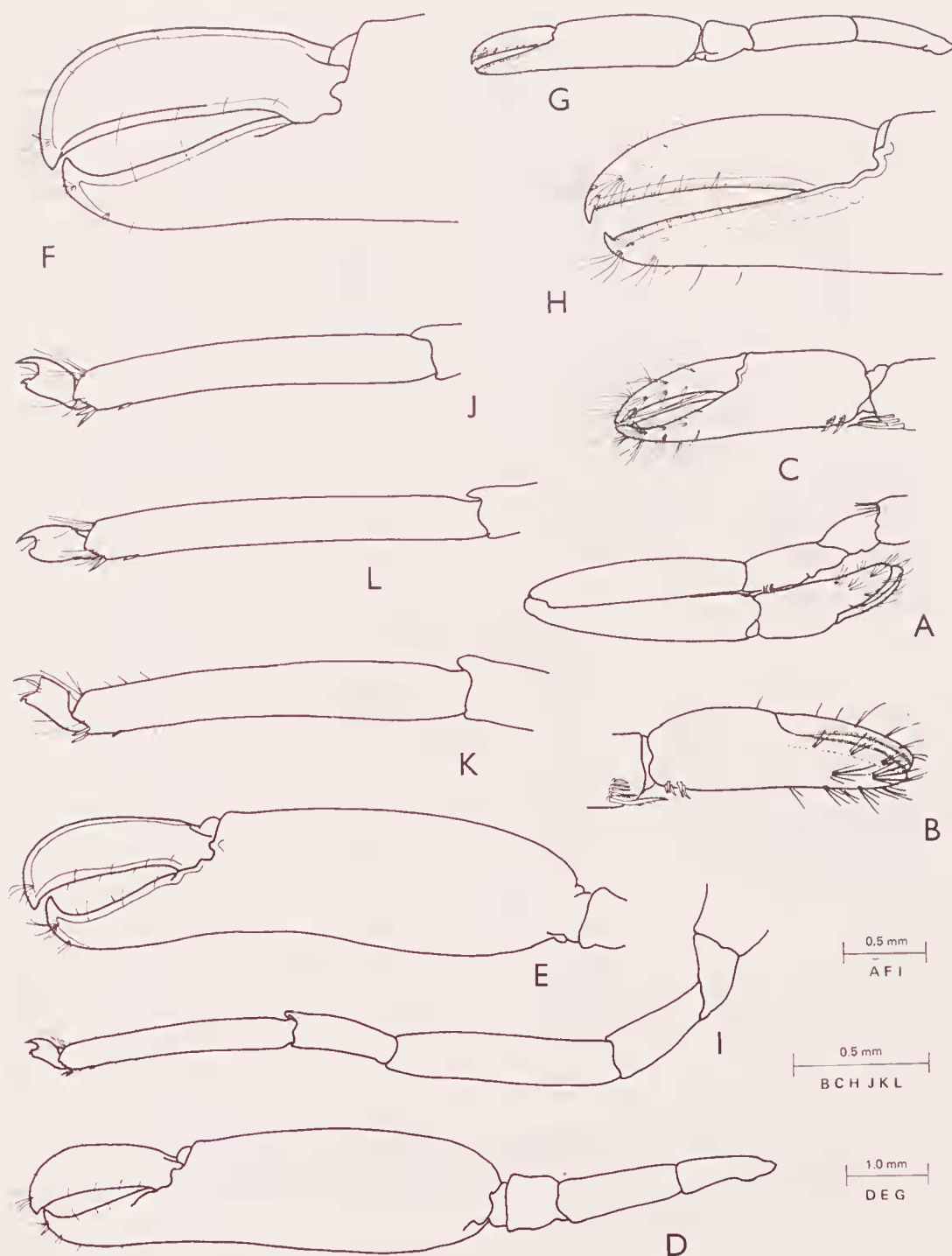


Fig. 4. *Dasella ansoni* sp. nov. A, first pereiopod. B, *idem*, chela. C, *idem*, lateral aspect. D, major second pereiopod. E, *idem*, chela. F, *idem*, fingers. G, minor second pereiopod. H, *idem*, fingers. I, third pereiopod. J, *idem*, dactyl and propod. K, propod and dactyl, fourth pereiopod. L, *idem*, fifth pereiopod. D, holotype. E, allotype. A-C, F-L, paratype.

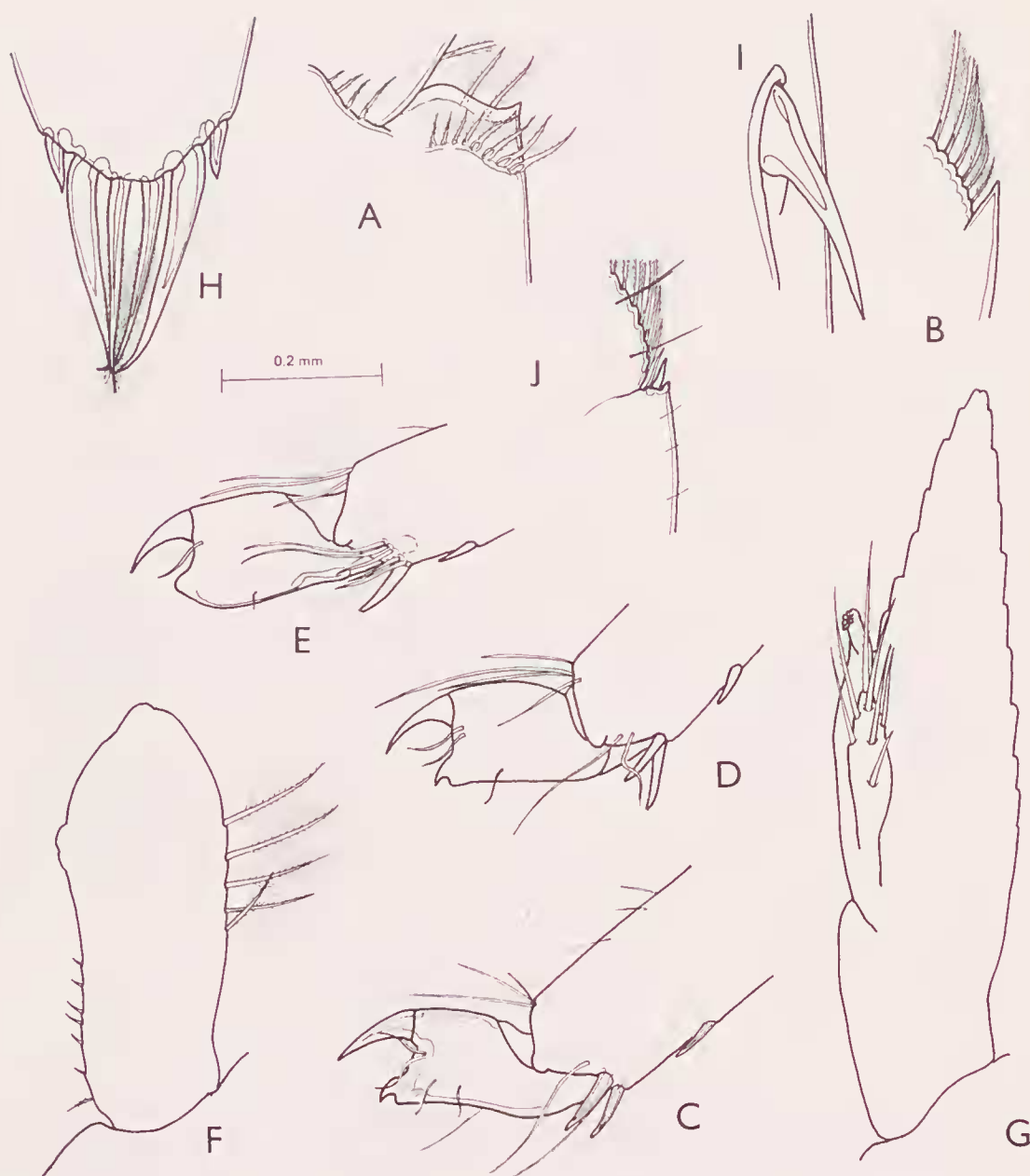


Fig. 5. *Dasella ansoni* sp. nov. A, proximal segment of antennular peduncle, distolateral angle. B, scaphocerite, distolateral angle. C, distal propod and dactyl, third pereopod. D, *idem*, fourth pereopod. E, *idem*, fifth pereopod. F, endopod of first pleopod. G, second pleopod. H, posterior telson spines. I, dorsal telson spine. J, distolateral angle of exopod of uropod. A-E, H-J, paratype. FG, allotype.

and shorter similar setae ventrally. Maxilla with simple elongated non-setose palp; distal endite bilobed, distal lobe larger than proximal, with only four and two slender terminal setae respectively; proximal endite obsolete; scaphognathite narrow, about 2-7 times longer than wide, posterior lobe

small, anterior lobe with medial margin concave. First maxilliped with slender, tapering, non-setose palp; basal endite broad, rounded, medial margin with numerous sparsely setulose setae; coxal endite feebly developed, non-setose; caridean lobe of exopod well developed;

epipod deeply bilobed. Second maxilliped normal, distal segment small and narrow with numerous serrulate spines and setae; penultimate segment broad, anteromedial angle produced and rounded, with long spines; epipod semicircular, without podobranch. Third maxilliped with endopod extending to about middle of carpoperite; basis and antepenultimate segment completely fused, combined segment about 4.4 times longer than wide, tapering slightly distally with sparse long simple setae medially; about 10 small submarginal spinules along second fourth of medial border; penultimate segment 2.5 times longer than wide, about 0.4 of length of antepenultimate segment, with long spines medially; terminal segment slightly shorter than penultimate, with slender spines; coxa not produced medially, large rounded epipod laterally, without arthrobranch. All maxillipeds with well developed exopods, with six plumose setae distally.

Thoracic sternites narrow, fourth without median process.

First pereopods similar, slender, exceeding scaphocerite by 0.75 of propod length; chela with palm subcylindrical, compressed, about 1.7 times longer than deep; fingers broad, subspatulate, gaping proximally, with finely denticulate lateral cutting edges, subequal to palm length, with groups of coarse setae; carpus about 1.7 times chela length, 5.5 times longer than wide, broadest distally; merus slightly shorter than carpus, 5.5 times longer than wide; ischium and basis normal; coxa without medial process, few setae only. Second pereopods well developed, markedly unequal, basically similar. Major chela with palm subcylindrical, about 2.8 times longer than deep, slightly swollen proximally, smooth; dactyl stout, about 0.55 of palm length, 3.5 times longer than deep, greatest depth at 0.7 of length, feebly hooked acute tip and entire feebly concave cutting edge; fixed finger with more robustly hooked acute tip and concave toothless cutting edge; carpus about 0.15 of length of palm, as long as wide, feebly excavated,

unarmed; merus about 0.4 of palm length, 3.0 times longer than wide, slightly broadened distally, unarmed; ischium equal to 0.8 of meral length, tapering proximally, unarmed; basis and coxa normal. Minor chela 0.5-0.6 times length of major, palm subcylindrical, about 2.8 times longer than deep, 1.8 times length of fingers; carpus 1.2 times longer than wide, 0.33 times length of palm, unarmed; merus and ischium similar to major pereopod. Ambulatory pereopods slender; third pereopod exceeds scaphocerite by three quarters of propod; dactyl strongly compressed, corpus about 2.0 times longer than deep with distoventral angle produced as a large triangular lobe extending distally beyond level of margin of corpus, with small recurved acute tooth on distal border; a pair of distolateral and two distal ventral sensory setae; unguis slender, acute, curved, 3.5 times longer than wide, subequal to dorsal length of corpus, half the ventral length, unarmed, exceeding distoventral accessory tooth; propod 6.0 times mid-lateral length of dactyl (from hinges to tip of unguis), 6.8 times longer than wide, tapering feebly distally, with single preterminal ventral spine and pair of distoventral spines; carpus about 0.4 of propod length, unarmed; merus slightly shorter than propod, stouter, 4.7 times longer than wide, unarmed; ischium subequal to carpus, 2.3 times longer than wide; basis and coxa normal. Fourth pereopod similar to third, propod 0.9 times length of propod of third. Fifth pereopod similar but tooth on distoventral process of dactylar corpus absent; propod slender, 9.0 times longer than wide, subequal to length of propod of third pereopod, with single distoventral and preterminal spines only and distolateral brush of cleaning setae.

Endopod of male first pleopod 2.0 times longer than broad, somewhat pointed distally with rudimentary preterminal medial lobe; central third of lateral border with five short plumose setae; proximal half of medial border with seven minute spines and proximal seta. Appendix masculina of male second pleopod greatly exceeded by

appendix interna, about 4.0 times longer than broad, with two medial, three distoventral, one lateral and one terminal spine, larger spines feebly spinulose.

Exopod of uropod extending beyond telson tip; protopod strongly acutely produced posterolaterally; exopod twice as long as wide, lateral border convex, unarmed, with small acute distolateral tooth, with small mobile spine and seta medially; endopod 2.7 times longer than wide, subequal to exopod length.

Types — The ovigerous female is designated as holotype, male as allotype and bopyridized female as paratype, registration numbers NTM Cr.00104/a, Cr.00104/b and Cr.00104/c respectively.

Measurements — Postorbital carapace lengths (mms), holotype, 3.10; allotype, 2.30, paratype 2.75.

Colouration — Generally transparent; rostrum, antennular peduncles and chelae of second pereopods feebly spotted with small white dots.

Host. — *Phallusia depressiuscula* Heller [Ascidacea]

Systematic Position — *Dasella ansoni* is clearly most closely related to the only other species of the genus, *D. herdmaniae* (Lebour), which it closely resembles in its general morphology and most of its finer morphological details. The two species may be easily separated from each other by the presence of a small acute recurved tooth on the distoventral process of the corpus of the dactyls of the third and fourth ambulatory pereopods and the association with *Phallusia depressiuscula* instead of *Herdmania momus*.

DISCUSSION

The discovery of a second species of the genus *Dasella* confirms the presence of a mobile hepatic spine as an important generic character, and also that ascidians are the typical host animals. It may also be noted that the rostrum of the type material was described as completely unarmed (Lebour, 1939) but that in the subsequently reported specimen, from the same host species, *Herdmania momus*, from the Southern Great Barrier Reef, a very small ventral rostral tooth was present (Bruce, 1981) as is present in the specimens of *D. ansoni*. It is most probable that this character is variable and that this small tooth is reduced in size or lost in larger specimens.

Lebour (1939) also reports that the third maxilliped has "the beginnings of podobranch", but no arthrobranch could be discerned on this appendage on the Heron Island specimen (Bruce, 1981). Similarly, no arthrobranch could be detected in *D. ansoni*.

The cutting edges of the fingers of the chela on the first pereopod of *D. ansoni* are minutely pectinate. This was not reported in the types of *D. herdmaniae* and the fingers of the Heron Island specimen were reported to have entire cutting edges.

ACKNOWLEDGEMENTS

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RESUMÉ

Une deuxième espèce du genre pontoniine *Dasella*, *D. ansoni* sp. nov. (Crustacea, Decapoda, Palaemonidae), de la mer d'Arafure, est décrite et illustrée. Cette nouvelle espèce s'apparente de près à *D. herdmaniae* (Lebour) et peut être facilement distinguée par la présence sur le corpus des dactyles des troisièmes et quatrièmes péréiopodes d'un processus distoventral armé d'une petite dent aigue et recourbée. Les crevettes ont été récoltées en association avec des hôtes ascidiens, *Phallusia depressiuscula*, capturés à une profondeur de 27 mètres.

LITERATURE CITED

- Bruce, A. J. 1981. Notes on some Indo-Pacific Pontoniinae, XXXVII. Additional information on *Dasella herdmaniae* (Lebour) (Decapoda, Natantia). *Crustaceana*, **40** (1): 50-56, figs. 1-2.
- Lebour, M. V. 1939. Decapod Crustacea associated with the ascidian *Herdmania*. *Proc. zool. Soc. Lond.*, **108** (B): 649-653, pls. 1-2.
- 1945. Alteration in the name *Dasia* as a decapod genus. *Proc. zool. Soc. Lond.*, **115** : 279.